CHEIRON *Classic Values, Innovative Advice*

State Police Retirement System of New Jersey

Actuarial Experience Study for July 1, 2021 through June 30, 2024

Produced by Cheiron

August 2025

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August 26, 2025

Board of Trustees
State Police Retirement System of New Jersey
State of New Jersey
Department of the Treasury
Division of Pension and Benefits, CN 295
Trenton, NJ 08625-0295

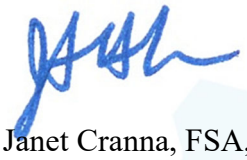
Dear Board Members:

The purpose of this report is to present the Actuarial Experience Study of the State Police Retirement System of New Jersey (SPRS, the System) in accordance with Title 53, Chapter 5A-32 of the NJ State Statute. This Statute requires the actuary to conduct an actuarial investigation into the mortality, service and salary experience of the members and beneficiaries of the System at least once every three years.

This study covers the actuarial experience from July 1, 2021 through June 30, 2024. The report includes analyses and results of our study as well as recommended assumptions for consideration by the Board to be used beginning with the July 1, 2025 actuarial valuation. It also includes the estimated financial impact of these assumption changes. The prior experience study was performed by Cheiron and covered the period July 1, 2018 through June 30, 2021.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron



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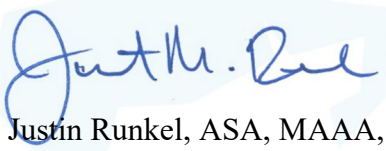

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SECTION I – EXECUTIVE SUMMARY

Actuarial assumptions (economic and demographic) are intended to be long-term in nature and should be both individually reasonable and consistent in the aggregate. The purpose of this experience study is to evaluate whether the current assumptions adequately reflect the long-term expectations for SPRS, and if not, to recommend adjustments. It is important to note that frequent and significant changes in the actuarial assumptions are not typically recommended, unless there are known fundamental changes in expectations of the economy, or with respect to SPRS's membership or assets that would warrant such frequent or significant changes.

SUMMARY OF ASSUMPTION ANALYSIS

This experience study specifically analyzes and makes recommendations for the following assumptions.

- **Retirement rates** – Modify rates based on recent experience.
- **Termination rates** – Modify rates based on recent experience.
- **Disability rates** – Modify accidental disability rates based on recent experience. Continue with the current ordinary disability rates.
- **Mortality rates** – Update to newly published Pub-2016 mortality tables. Continue with generational mortality improvement scale MP-2021.
- **Family composition** – Continue with the current assumptions.
- **Price and wage inflation rates** – Continue with the current assumptions.
- **Salary increases rates** – Modify rates based on recent experience.

The recommended changes to the assumptions in the aggregate will increase the actuarial liability and the Statutory Contributions.

Further information about the impact of these changes on the Statutory Contributions and funded status can be found on the next page.

SECTION I – EXECUTIVE SUMMARY

Table I-1
Cost Impact of Assumption Changes on July 1, 2024 Valuation Results

	Current Assumptions	Recommended Assumptions
Assets and Liabilities		
Actuarial Liability	$ 4,461,205,210	$ 4,514,415,855
Actuarial Value of Assets (AVA)[1]	2,536,561,144	2,536,561,144
Unfunded Actuarial Liability/(Surplus)	$ 1,924,644,066	$ 1,977,854,711
Funded Ratio	56.9%	56.2%
Contribution Amounts		
State Normal Cost at End of Year	$ 70,773,269	$ 77,146,215
Amortization Payment of UAL	165,154,703	169,720,736
Total Statutory Contribution for FYE	$ 235,927,972	$ 246,866,951
Difference due to assumption changes		
Actuarial Liability		$ 53,210,645
Actuarial Value of Assets (AVA)[1]		0
Unfunded Actuarial Liability/(Surplus)		$ 53,210,645
Funded Ratio		-0.7%
State Normal Cost at End of Year		$ 6,372,946
Amortization Payment of UAL		4,566,033
Total Statutory Contribution for FYE		$ 10,938,979

[1] Includes discounted State appropriations receivable

The body of this report provides details and support for our conclusions and recommendations for the assumptions.

SECTION II – CERTIFICATION

The purpose of this report is to provide the results of an Actuarial Experience Study of the State Police Retirement System of New Jersey (SPRS) covering the three-year period from July 1, 2021 through June 30, 2024. This report is for the use of the Division of Pensions and Benefits and the SPRS Board of Trustees in selecting assumptions to be used in actuarial valuations beginning July 1, 2025. This experience study was completed in accordance with the provisions of Title 53, Chapter 5A-32 of the NJ State Statute which requires periodic review of the experience of the System.

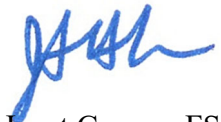
In preparing our report, we relied on information (some oral and some written) supplied by the Division of Pensions and Benefits. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality.

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in ProVal assumptions or output that would affect this analysis.

The data, plan provisions and actuarial methods are the same as those shown in our July 1, 2024 actuarial valuation report, and the actuarial assumptions are the same except as modified for the purpose of estimating the financial impact of the recommended assumption changes.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared exclusively for the State Police Retirement System of New Jersey for the purpose described herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any such party.



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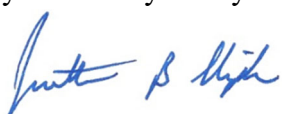

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SECTION III – DEMOGRAPHIC ASSUMPTIONS

Demographic assumptions are used to predict membership behavior, including rates of retirement, termination, disability, and mortality. These assumptions are based primarily on the historical experience of SPRS, with some adjustments where future experience is expected to differ from historical experience and with deference to standard tables where SPRS experience is not fully credible, which means there is insufficient data to support an assumption, and a standard table is available.

ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

For all of the demographic assumptions, we determined the ratio of the actual number of decrements for each membership group compared to the expected number of decrements (A/E ratio or actual-to-expected ratio). Generally, the goal is to get as close as possible to an A/E ratio of 100%. Appropriate assumptions are often dependent on the amount of data available, and if there is insufficient data, then the best assumption may be a reflection of standard tables. For example, there are typically relatively low incidences of pre-retirement deaths, so using standard mortality tables may be more appropriate. This could result in the A/E ratio moving further away from 100%. Also, we aggregate members for demographic assumptions review when the data at individual ages is no longer credible. For example, we may reduce the number of service bands for an assumption with low incidences, if those service bands do not materially improve the quality of the results.

We also calculate an r-squared statistic for each assumption. R-squared measures how well the assumption fits the actual data and can be thought of as the percentage of the variation in actual data explained by the assumption. Ideally, r-squared would equal 1.000, although this is never the case in reality. Any recommended assumption change should increase the r-squared compared to the current assumption making it closer to 1.000 unless the pattern of future decrements is expected to be different from the pattern experienced during the period of study.

In addition, we calculate the 90% confidence interval, which represents the range within which the true decrement rate during the experience study period is expected to fall 90% of the time. In the graphs, the black squares represent the actual experience observed and the gray bars represent the 90% confidence interval around that experience. The red and green lines represent the current and recommended assumptions, respectively. When the recommended assumption is the same as the current assumption, the green line sits over the red line and the red line does not show. Where there is sufficient experience, the confidence interval is relatively narrow, and where there is little experience, the confidence interval can be very wide. We generally recommend assumption changes when the current assumption is outside the 90% confidence interval of the observed experience. However, adjustments are made to account for differences between future expectations and historical experience and to account for the past experience represented by the current assumption. For mortality rates, we compare SPRS's experience to that of a standard table.

RETIREMENT RATES

The current retirement rates vary by age and service and are applied to all members who are eligible to retire. As a result, a state police officer who is age 50 with 20 years of service, for example, is assumed to be less likely to retire than a police officer who is age 50 with 25 years of service. In reviewing the data for SPRS, we find that at many ages, members are most likely to retire with 25 years of service, and those with more or less than 25 years of service are less likely to retire. Mandatory retirement is age 55. SPRS is not large enough to justify assumptions for each age and service combination, so we recommend separate assumptions by service groups:

- Members with 20 to 24 years of service,
- Members with 25 years of service, and
- Members with 26 or more years of service.

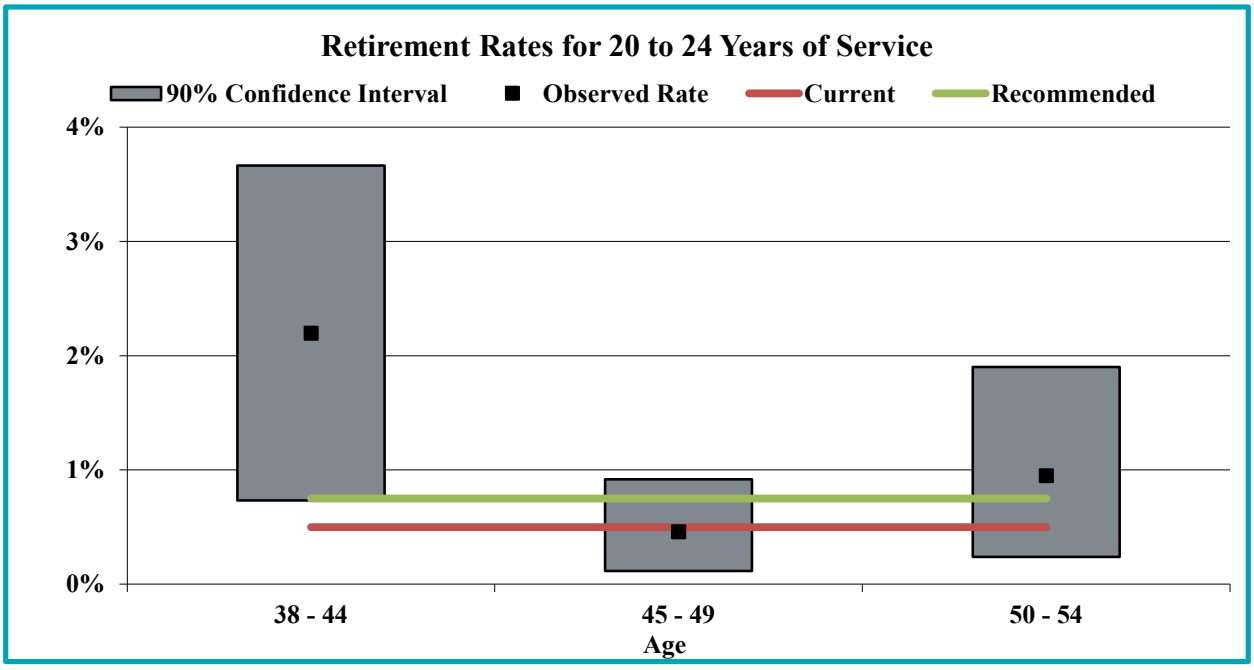
SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

In Table III-R1 we show the calculation of actual-to-expected ratios and the r-squared statistic for members with 20 to 24 years of service, and Chart III-R1 shows the information graphically along with the 90% confidence interval. The data shows that the overall actual retirement rates are higher than expected. This trend is consistent with the prior study. For retirements with 20 to 24 years of service, we recommend increasing the rate to 0.75% for all ages.

Table III-R1

Retirement Rates for 20 to 24 Years of Service									
Age		Retirements			Retirement Rates			A/E Ratios	
Band	Exposures	Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
38 - 44	273	6	1.4	2.0	2.20%	0.50%	0.75%	440%	293%
45 - 49	871	4	4.4	6.5	0.46%	0.50%	0.75%	92%	61%
50 - 54	421	4	2.1	3.2	0.95%	0.50%	0.75%	190%	127%
Total	**1,565**	**14**	**7.8**	**11.7**	**0.89%**	**0.50%**	**0.75%**	**179%**	**119%**
R-squared			**0.096**	**0.096**					

Chart III-R1



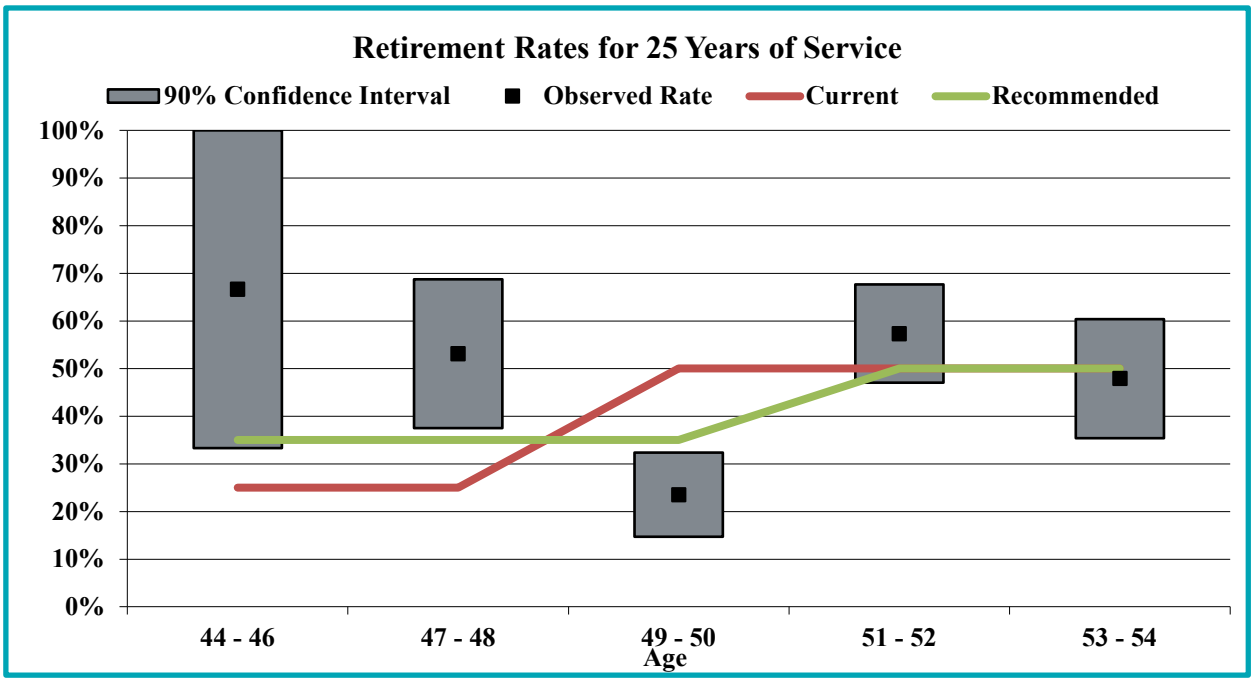
SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R2 shows the calculation of actual-to-expected ratios and the r-squared statistic for members with 25 years of service, and Chart III-R2 shows the information graphically along with the 90% confidence interval. The data shows that the overall actual retirement rates are higher than expected for ages 44 to 48, lower than expected for ages 49 to 50, and close to expected for ages 51 to 54. For retirements with 25 years of service, we recommend increasing the rates to 35% for ages 44 to 48, decreasing the rates to 35% for ages 49 to 50, and keeping the rates unchanged at 50% for age 51 and older. The recommended rates are also consistent with experience from the two prior studies.

Table III-R2

Retirement Rates for 25 Years of Service									
Age		Retirements			Retirement Rates			A/E Ratios	
Band	Exposures	Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
44 - 46	6	4	1.5	2.1	66.67%	25.00%	35.00%	267%	190%
47 - 48	32	17	8.0	11.2	53.13%	25.00%	35.00%	213%	152%
49 - 50	68	16	34.0	23.8	23.53%	50.00%	35.00%	47%	67%
51 - 52	68	39	34.0	34.0	57.35%	50.00%	50.00%	115%	115%
53 - 54	48	23	24.0	24.0	47.92%	50.00%	50.00%	96%	96%
Total	**222**	**99**	**101.5**	**95.1**	**44.59%**	**45.72%**	**42.84%**	**98%**	**104%**
R-squared			**0.619**	**0.843**					

Chart III-R2



SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R3 shows the calculation of actual-to-expected ratios and the r-squared statistic for members with 26 or more years of service, and Chart III-R3 shows the information graphically along with the 90% confidence interval. For retirements with 26 or more years of service, we recommend keeping a flat rate of 35% for all ages.

Table III-R3

Retirement Rates for 26 or More Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
45 - 48	5	3	1.8	1.8	60.00%	35.00%	35.00%	171%	171%
49	13	4	4.6	4.6	30.77%	35.00%	35.00%	88%	88%
50	36	12	12.6	12.6	33.33%	35.00%	35.00%	95%	95%
51	52	20	18.2	18.2	38.46%	35.00%	35.00%	110%	110%
52	47	20	16.5	16.5	42.55%	35.00%	35.00%	122%	122%
53	43	14	15.1	15.1	32.56%	35.00%	35.00%	93%	93%
54	40	14	14.0	14.0	35.00%	35.00%	35.00%	100%	100%
Total	**236**	**87**	**82.6**	**82.6**	**36.86%**	**35.00%**	**35.00%**	**105%**	**105%**
R-squared			**0.970**	**0.970**					

Chart III-R3

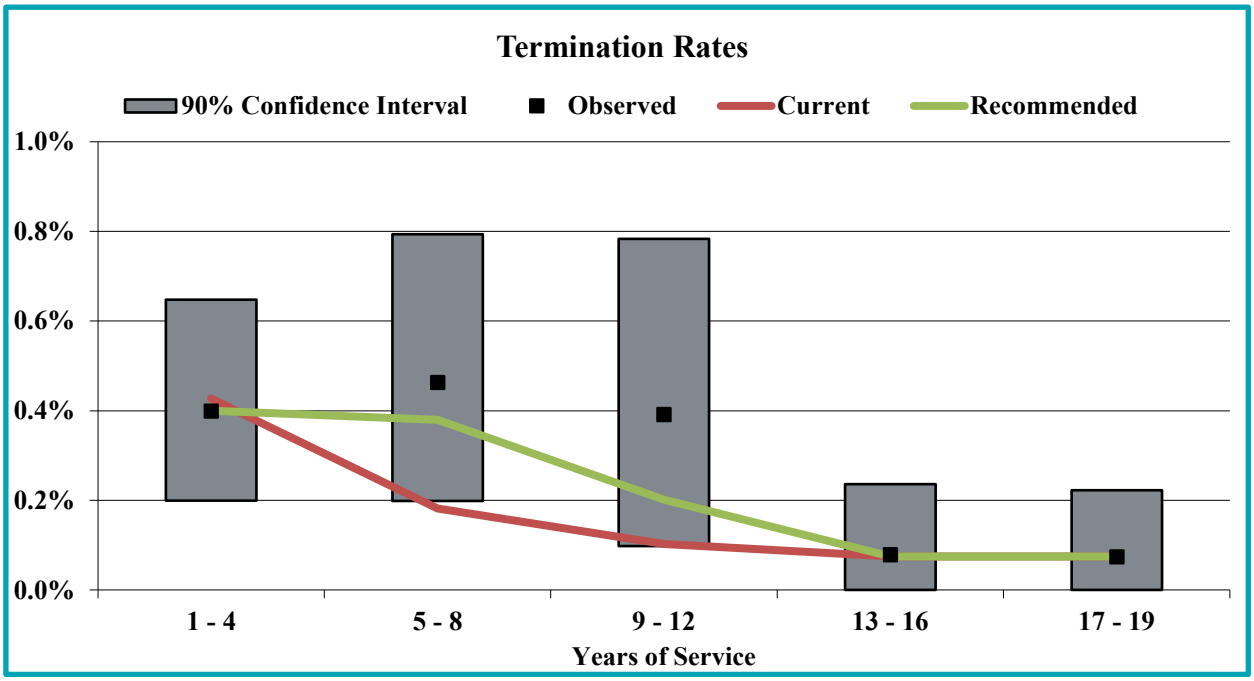
SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Termination rates reflect the frequency at which active members leave employment for reasons other than retirement, death, or disability. The current assumption varies by service. While the actual number of terminations was higher than expected during the period, overall terminations remain low. The data shows that the termination rates are lower than expected for 1 to 4 years of service, higher than expected for 5 to 12 years of service, and close to expected for 13 or more years of service. Therefore, we recommend modifying the rates for years 1 to 11 years of service based on recent experience.

Table III-T1

Termination Rates									
Service Band	Exposures	Terminations			Termination Rates			A/E Ratios	
		Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
1 - 4	2,006	8	8.6	8.0	0.40%	0.43%	0.40%	93%	100%
5 - 8	1,512	7	2.8	5.7	0.46%	0.18%	0.38%	254%	122%
9 - 12	1,022	4	1.0	2.1	0.39%	0.10%	0.20%	382%	194%
13 - 16	1,271	1	1.0	1.0	0.08%	0.08%	0.08%	105%	105%
17 - 19	1,348	1	1.0	1.0	0.07%	0.08%	0.08%	99%	99%
Total	**7,159**	**21**	**14.3**	**17.8**	**0.29%**	**0.20%**	**0.25%**	**146%**	**118%**
R-squared			**0.148**	**0.266**					

Chart III-T1



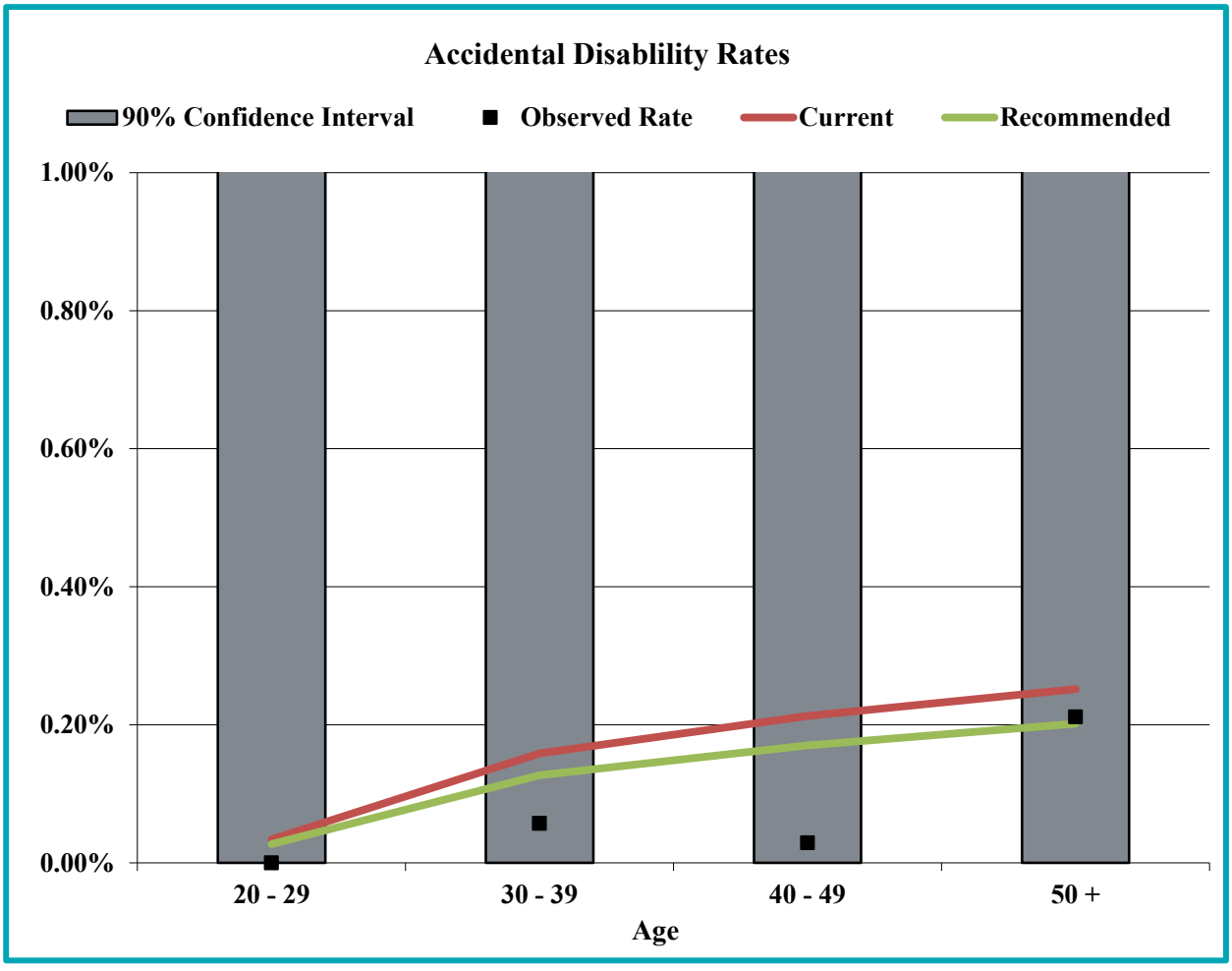
SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

The following table shows the calculation of actual-to-expected ratios and the r-squared statistic for terminations due to accidental disability. While the incidence is very low, the experience shows the actual rates of accidental disability are lower than expected. This was also the case in the prior experience study. Therefore, we recommend lowering the accidental disability rates at each age to move closer to recent experience.

Table III-D1

Accidental Disablility Rates									
Age Band	Exposures	Disabilities			Disability Rates			A/E Ratios	
		Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
20 - 29	1,297	0	0.4	0.3	0.00%	0.03%	0.03%	0%	0%
30 - 39	3,486	2	5.5	4.4	0.06%	0.16%	0.13%	36%	45%
40 - 49	3,453	1	7.3	5.9	0.03%	0.21%	0.17%	14%	17%
50 +	946	2	2.4	1.9	0.21%	0.25%	0.20%	84%	105%
Total	**9,182**	**5**	**15.7**	**12.5**	**0.05%**	**0.17%**	**0.14%**	**32%**	**40%**
R-squared			**0.0195**	**0.0195**					

Chart III-D1



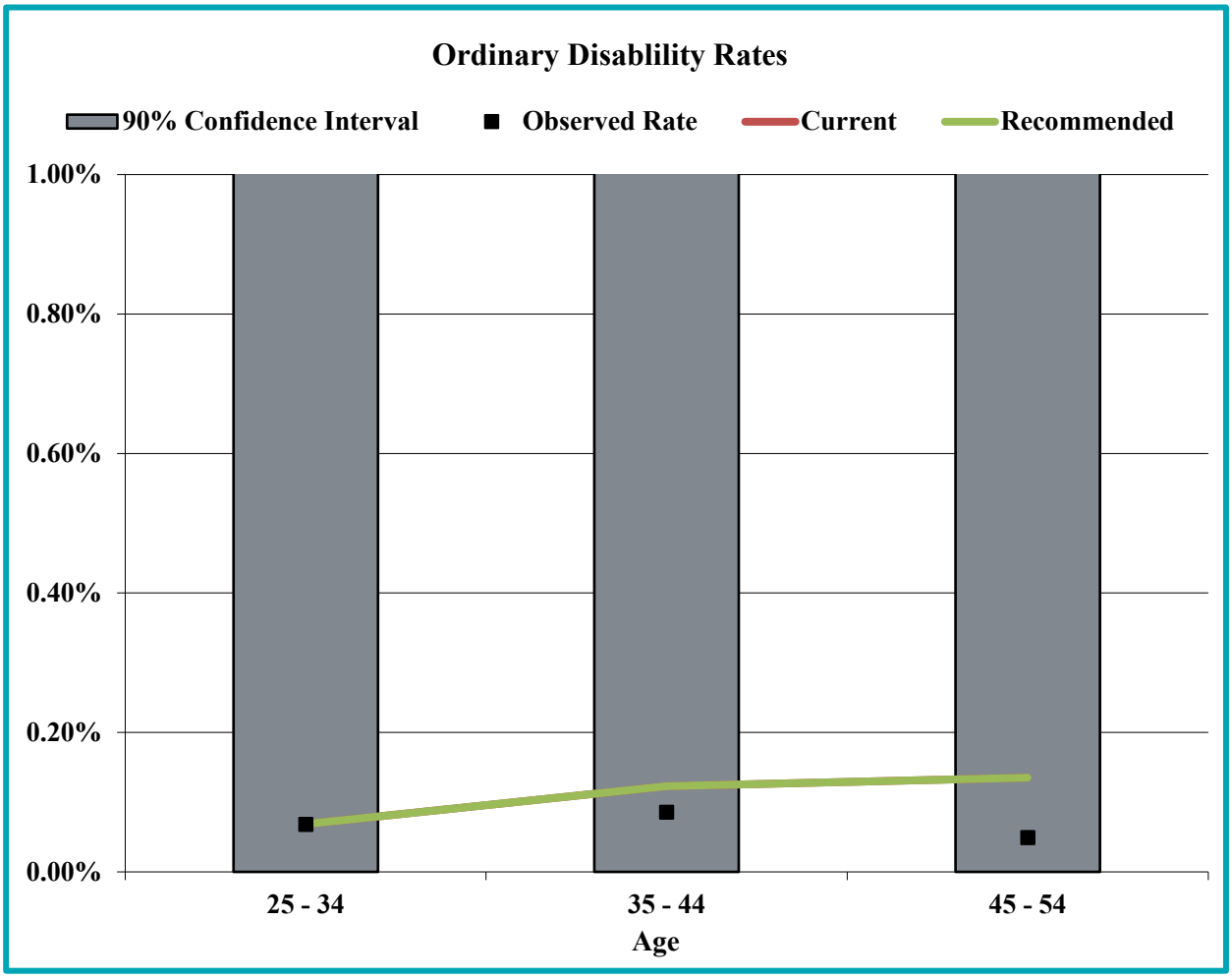
SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Table III-D2 shows the calculation of actual-to-expected ratios and the r-squared statistic for terminations due to ordinary disability, and Chart III-D2 shows the information graphically along with the 90% confidence interval. The experience shows very low incidence of ordinary disability, and therefore we recommend continuing with the current assumption.

Table III-D2

Ordinary Disablility Rates									
Age Band	Exposures	Disabilities			Disability Rates			A/E Ratios	
		Actual	Current	Recommended	Actual	Current	Recommended	Current	Recommended
25 - 34	1,471	1	1.0	1.0	0.07%	0.07%	0.07%	99%	99%
35 - 44	3,513	3	4.3	4.3	0.09%	0.12%	0.12%	69%	69%
45 - 54	2,037	1	2.8	2.8	0.05%	0.14%	0.14%	36%	36%
Total	**7,021**	**5**	**8.1**	**8.1**	**0.07%**	**0.12%**	**0.12%**	**62%**	**62%**
R-squared			**0.0342**	**0.0342**					

Chart III-D2



SECTION III – DEMOGRAPHIC ASSUMPTIONS

MORTALITY RATES

Mortality assumptions are typically developed separately by gender. Unlike most demographic assumptions, mortality assumptions do not rely exclusively on plan experience. Standard mortality tables and projection scales, reflecting future life expectancy improvements, serve as the primary basis for the assumptions. The standard table can then be modified to better reflect the System's experience, depending on the amount of available data.

The Society of Actuaries (SOA) completed an extensive mortality study of public pension plan experience and issued a set of mortality tables named the Pub-2016 mortality tables which provide insights into the composition of gender-specific pension mortality by factors such as job category (e.g. General Employees, Teachers, Public Safety), salary/benefit amount and health status (e.g. healthy or disabled).

In addition, there has been a long history of mortality improvement among pensioners in the U.S., and there is an expectation that mortality rates will continue to improve in the future. The SOA periodically publishes mortality improvement scales that reflect continued mortality improvement trends. The SOA's MP-2021 scale remains the most recent mortality improvement projection scale at the time this analysis was prepared. However, the MP-2021 scale only reflects historical mortality data through calendar year 2019. The COVID-19 pandemic may have caused a temporary change in mortality patterns.

The steps in our analysis of the mortality assumptions are as follows:

1. Select a standard mortality table that reflects the anticipated experience of the System.
2. Compare actual experience of the System to what would have been predicted by the selected standard table for the period of the experience study.
3. Adjust the standard table either fully or partially depending on the level of credibility for the System's experience. This adjusted table is called the base table.
4. Select an appropriate standard mortality improvement projection scale and apply it to the base table.

Similar to the methodology used to develop the Pub-2016 tables, when actual experience of the System is compared to that of the standard table, the experience is weighted based on the amount of income (salary for pre-retirement mortality and pension benefit for post-retirement mortality). Mortality studies in the U.S. have consistently shown that individuals with higher income have longer life expectancies than individuals with lower income. It is important for a pension plan to use assumptions that are weighted by income to reflect not just the incidence of a decrement but the impact on liabilities.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

In the prior study, SPRS adopted the following assumptions:

Active Members (Non-Annuitants): The Pub-2010 Public Safety Above-Median Income Employee mortality table *[PubS-2010(A) Employee]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021. 35% of the deaths are assumed to be accidental.

Healthy Retirees (Healthy Annuitants): The Pub-2010 Public Safety Above-Median Income Healthy Retiree mortality table *[PubS-2010(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Beneficiaries (Contingent Annuitants): The Pub-2010 General Above-Median Income Healthy Retiree mortality table *[PubG-2010(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Disabled Retirees (Disabled Annuitants): The Pub-2010 Public Safety Disabled Retiree mortality table *[PubS-2010 Disabled Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from a base year of 2010 on a generational basis using SOA's Scale MP-2021.

Deaths among active and inactive lives for SPRS in a three-year period represent a relatively small sample size and do not provide meaningful statistics. For healthy retirees there were 145 deaths over this period, for survivors there were 69 deaths, for disabled retirees there were 14 deaths, and for active members there were three deaths. For reference, a fully credible sample would include 1,082 deaths. We therefore recommend using standard Pub-2016 tables without any adjustments.

Since the SOA has not released a more recent mortality improvement scale due to the impact of the COVID-19 pandemic on underlying data, we recommend continuing to use MP-2021 as the mortality improvement scale.

We recommend the following mortality assumptions:

Active Members (Non-Annuitants): The Pub-2016 Public Safety Above-Median Income Employee mortality table *[PubS-2016(A) Employee]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021. 35% of the deaths are assumed to be accidental.

Healthy Retirees (Healthy Annuitants): The Pub-2016 Public Safety Above-Median Income Healthy Retiree mortality table *[PubS-2016(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Beneficiaries (Contingent Annuitants): The Pub-2016 General Above-Median Income Healthy Retiree mortality table *[PubG-2016(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021. Mortality tables specifically designed for public safety employees may reflect higher mortality rates than expected for beneficiaries of public safety employees. We therefore recommend using mortality tables designed for general employees for the beneficiaries of safety employees.

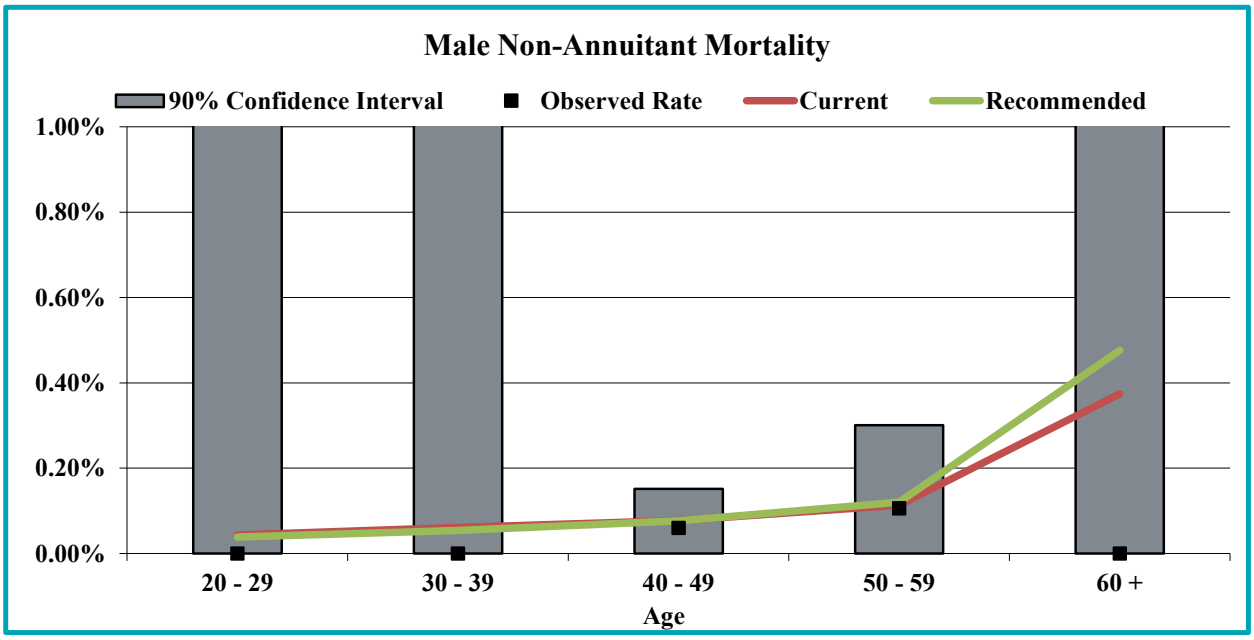
Disabled Retirees (Disabled Annuitants): The Pub-2016 Public Safety Disabled Retiree mortality table *[PubS-2016 Disabled Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from a base year of 2016 on a generational basis using SOA's Scale MP-2021.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M1 – Active Males

Non-Annuitant Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratio	
				Actual	Current	Recommended	Current	Recommended
20 - 29	1,206	0	78,334,594	0	33,942	30,424	0%	0%
30 - 39	3,254	0	264,811,664	0	160,632	142,231	0%	0%
40 - 49	3,301	2	375,579,594	225,212	288,992	286,030	78%	79%
50 - 59	997	1	126,911,590	134,186	143,970	152,585	93%	88%
60 +	10	0	899,912	0	3,372	4,288	0%	0%
Total	**8,768**	**3**	**846,537,354**	**359,398**	**630,908**	**615,559**	**57%**	**58%**
R-Squared					**0.074**	**0.072**		

Chart III-M1

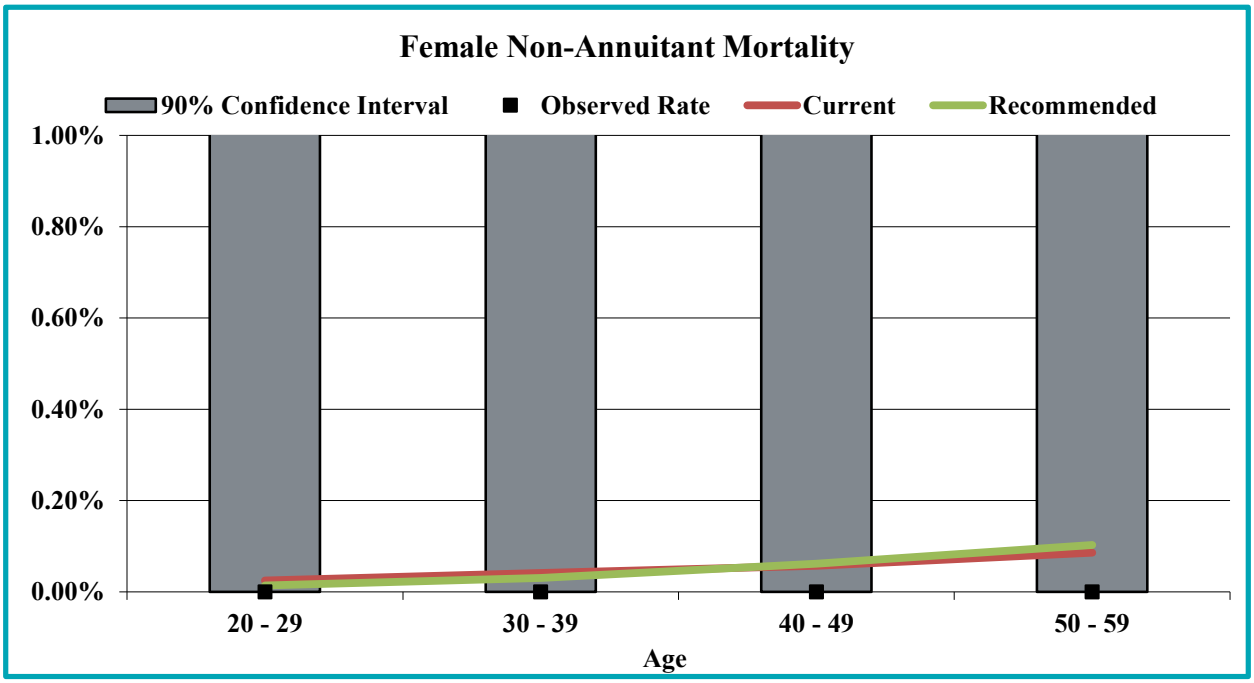


SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M2 – Active Females

Non-Annuitant Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratio	
				Actual	Current	Recommended	Current	Recommended
20 - 29	91	0	5,913,050	0	1,482	828	0%	0%
30 - 39	232	0	18,279,716	0	7,611	5,526	0%	0%
40 - 49	152	0	17,720,950	0	10,097	10,976	0%	0%
50 - 59	52	0	6,990,594	0	6,020	7,215	0%	0%
60 +	0	0	0	0	0	0	0%	0%
Total	**527**	**0**	**48,904,310**	**0**	**25,209**	**24,545**	**0%**	**0%**
R-Squared					**0.000**	**0.000**		

Chart III-M2



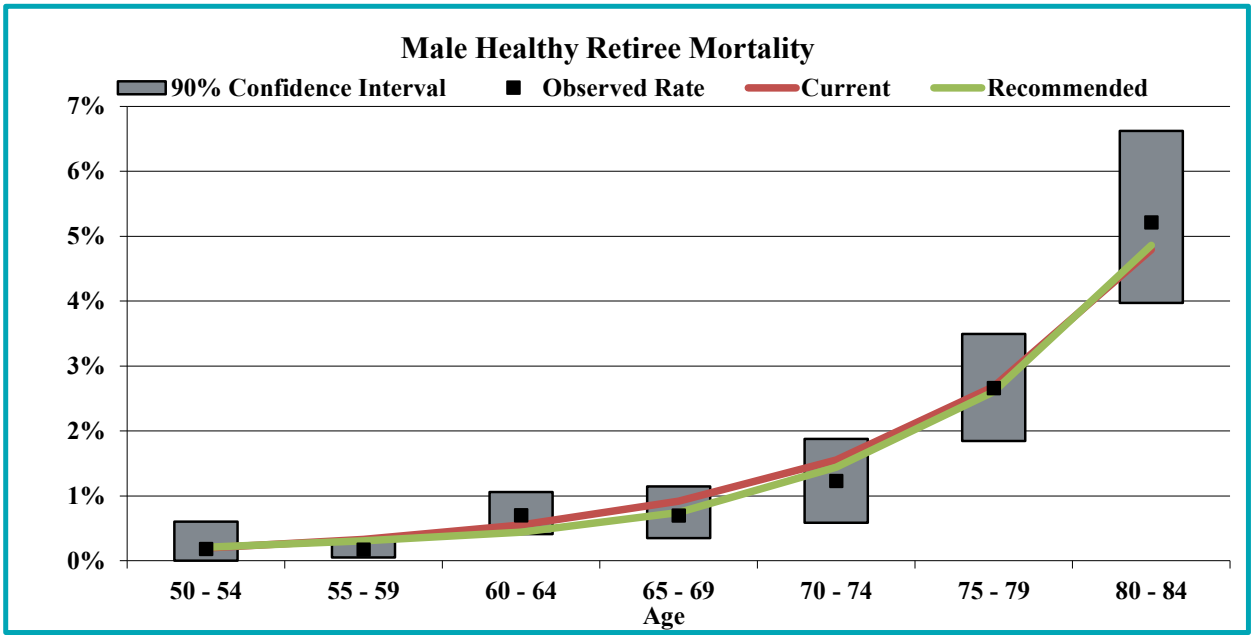
During the three-year period, there were three deaths in active service. Of these deaths, one was accidental. As of June 30, 2024, there were 32 survivors receiving ordinary death benefits and 21 survivors receiving accidental death benefits. We recommend keeping the current assumption that 35% of the deaths in active service are accidental deaths.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M3 – Healthy Retiree Males

Healthy Retiree Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	498	1	47,686,224	86,174	93,610	99,961	92%	86%
55 - 59	1,857	3	159,166,924	270,208	525,932	491,440	51%	55%
60 - 64	1,699	12	139,109,095	974,593	765,246	612,007	127%	159%
65 - 69	1,134	8	87,726,192	608,759	806,946	653,588	75%	93%
70 - 74	852	10	60,519,027	744,327	939,947	872,202	79%	85%
75 - 79	1,029	33	63,930,555	1,700,983	1,717,357	1,667,632	99%	102%
80 - 84	755	40	40,295,031	2,100,200	1,931,507	1,957,690	109%	107%
85 - 89	229	14	11,079,165	594,979	928,816	963,247	64%	62%
90 - 94	124	17	5,148,153	709,488	761,223	799,122	93%	89%
95 +	31	6	1,042,371	189,097	230,560	251,689	82%	75%
Total	**8,208**	**144**	**615,702,737**	**7,978,808**	**8,701,143**	**8,368,577**	**92%**	**95%**
R-Squared					**0.587**	**0.580**		

Chart III-M3



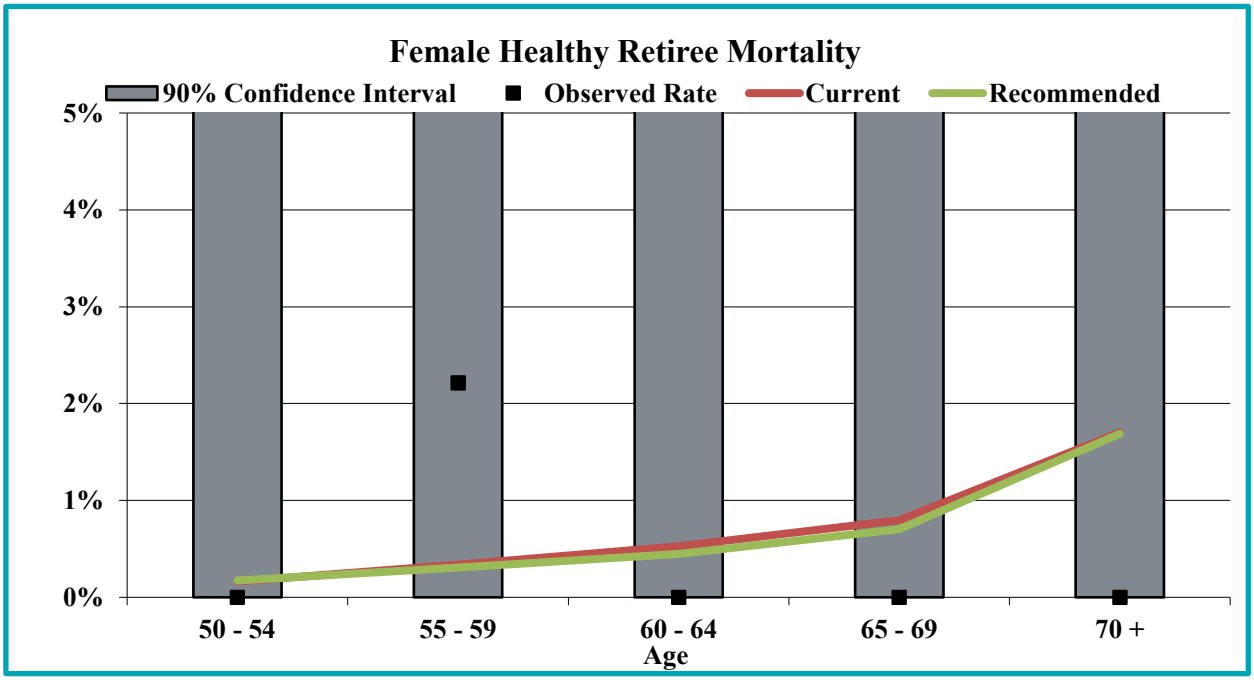
With mandatory retirement at age 55, we focused our analysis on ages 50 to 84, the age range encompassing most of the retirees.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M4 – Healthy Retiree Females

Healthy Retiree Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	20	0	1,863,685	0	3,018	3,190	0%	0%
55 - 59	46	1	3,822,561	84,702	12,864	11,768	658%	720%
60 - 64	66	0	5,440,513	0	28,624	24,387	0%	0%
65 - 69	34	0	2,587,921	0	20,585	18,165	0%	0%
70 +	7	0	402,324	0	6,848	6,786	0%	0%
Total	**173**	**1**	**14,117,004**	**84,702**	**71,938**	**64,296**	**118%**	**132%**
R-Squared					**0.063**	**0.073**		

Chart III-M4



There is relatively little mortality data available for female healthy retirees so the A/E ratio does not provide meaningful information.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

The Contingent Annuitant mortality assumption is used for beneficiaries both before and after retiree death. However, reliable mortality data is only available for survivors (i.e., those receiving a benefit after retiree death). We analyzed the survivor data using both the current and recommended assumptions for reasonability, but we did not rely solely on this data in setting the assumption. We do not necessarily expect to see an A/E ratio of 1.0 when comparing survivor data to the Contingent Annuitant mortality assumption. We have also considered the data for healthy retirees when recommending this assumption.

Table III-M5 – Male Survivors

Survivors Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	0	0	0	0	0	0	0%	0%
55 - 59	0	0	0	0	0	0	0%	0%
60 - 64	0	0	0	0	0	0	0%	0%
65 - 69	2	1	126,240	63,120	1,281	1,199	4929%	5265%
70 +	3	0	123,918	0	4,870	4,794	0%	0%
Total	**5**	**1**	**250,158**	**63,120**	**6,150**	**5,993**	**1026%**	**1053%**
R-Squared					**0.011**	**0.009**		

Mortality tables specifically designed for public safety employees may reflect higher mortality rates than expected for beneficiaries of public safety employees. We therefore recommend using mortality tables based on general employee data as the assumption for the beneficiaries of public safety employees.

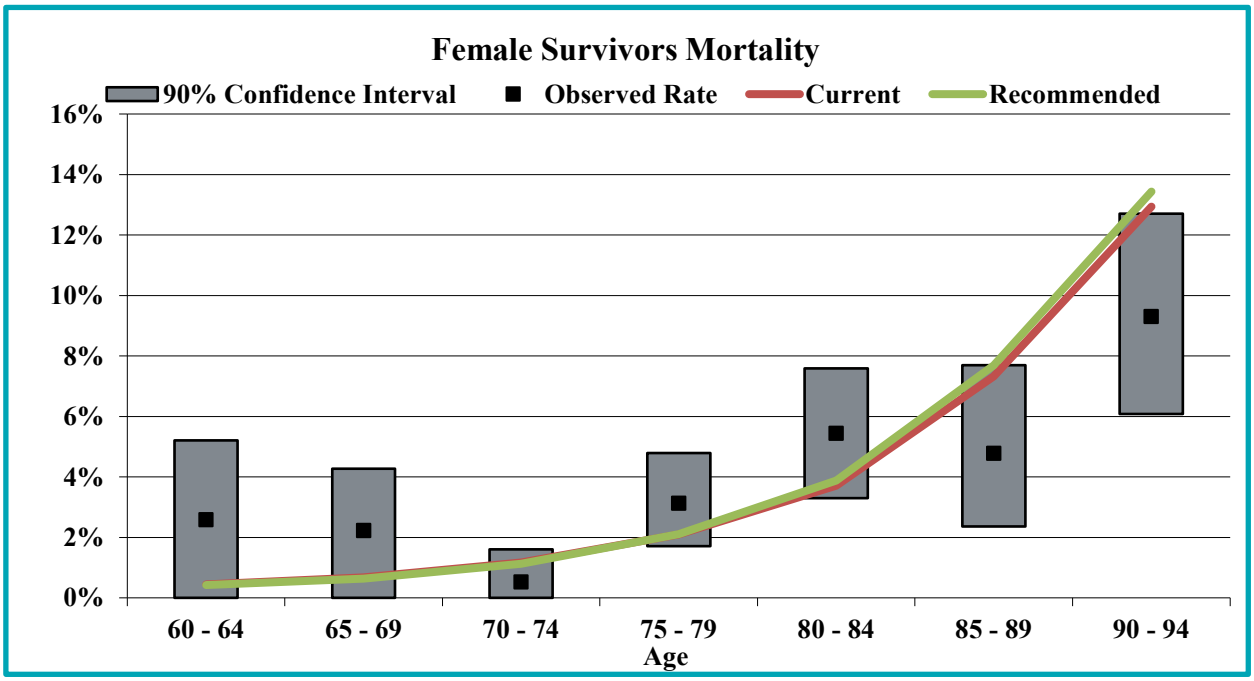
Given the limited data, we have omitted the chart.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M6 –Female Survivors

Survivors Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	21	0	1,355,302	0	2,911	3,186	0%	0%
55 - 59	44	0	2,359,822	0	7,558	7,392	0%	0%
60 - 64	96	2	4,812,864	124,469	21,542	20,413	578%	610%
65 - 69	117	2	5,717,773	127,165	38,917	36,258	327%	351%
70 - 74	186	1	7,981,504	41,839	93,557	90,564	45%	46%
75 - 79	292	10	11,522,000	360,754	241,749	242,831	149%	149%
80 - 84	303	15	11,098,218	603,882	412,403	430,524	146%	140%
85 - 89	169	9	5,705,972	272,772	417,880	438,951	65%	62%
90 - 94	181	16	5,427,326	504,718	702,347	729,088	72%	69%
95 +	46	13	1,286,564	351,793	251,958	264,040	140%	133%
Total	**1,455**	**68**	**57,267,345**	**2,387,392**	**2,190,822**	**2,263,246**	**109%**	**105%**
R-Squared					**0.426**	**0.423**		

Chart III-M6



Mortality tables specifically designed for public safety employees may reflect higher mortality rates than expected for beneficiaries of public safety employees. We therefore recommend using mortality tables based on general employee data as the assumption for the beneficiaries of public safety employees.

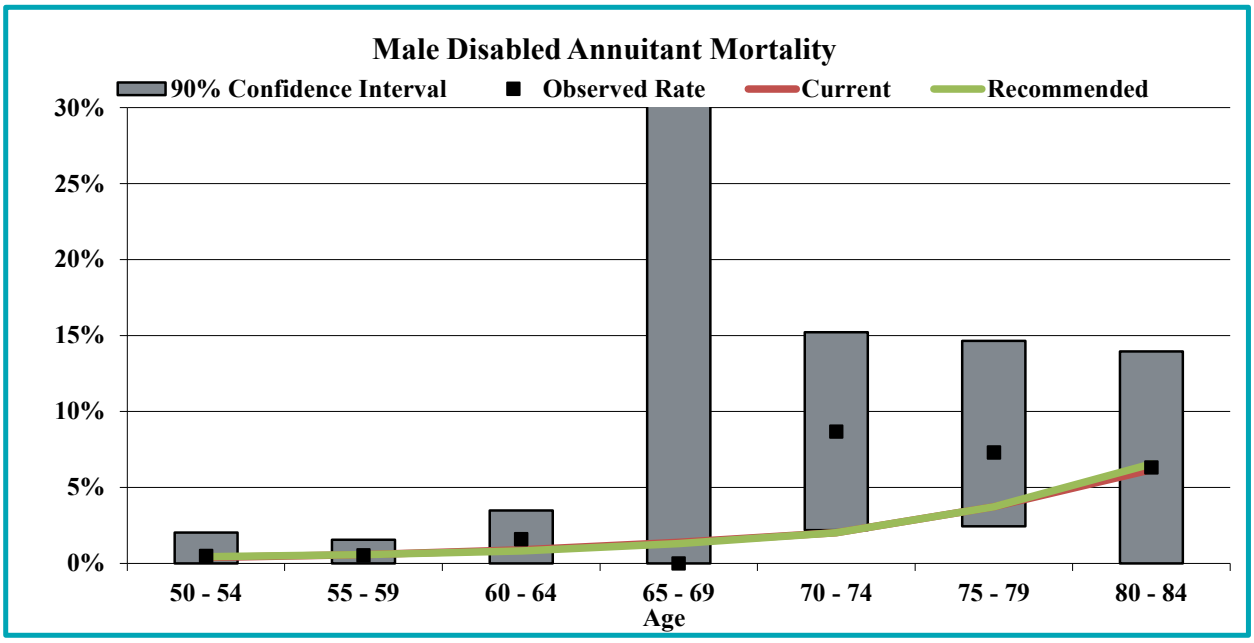
We focused our analysis on ages 60 to 94, the age range encompassing most of the survivors.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M7 – Disabled Retiree Males

Disabled Annuitant Mortality - Base Table for Males								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	99	1	6,230,026	30,554	23,376	26,581	131%	115%
55 - 59	195	1	11,156,885	58,996	63,408	64,079	93%	92%
60 - 64	144	3	8,011,930	127,255	71,858	64,927	177%	196%
65 - 69	78	0	4,404,953	0	60,983	57,274	0%	0%
70 - 74	46	4	2,092,465	181,594	42,222	42,212	430%	430%
75 - 79	41	2	1,550,427	113,205	57,783	57,607	196%	197%
80 - 84	43	3	1,252,695	78,944	77,109	81,935	102%	96%
85 - 89	11	0	356,411	0	31,527	34,490	0%	0%
90 +	0	0	0	0	0	0	0%	0%
Total	**657**	**14**	**35,055,792**	**590,548**	**428,267**	**429,104**	**138%**	**138%**
R-Squared					**0.021**	**0.017**		

Chart III-M7



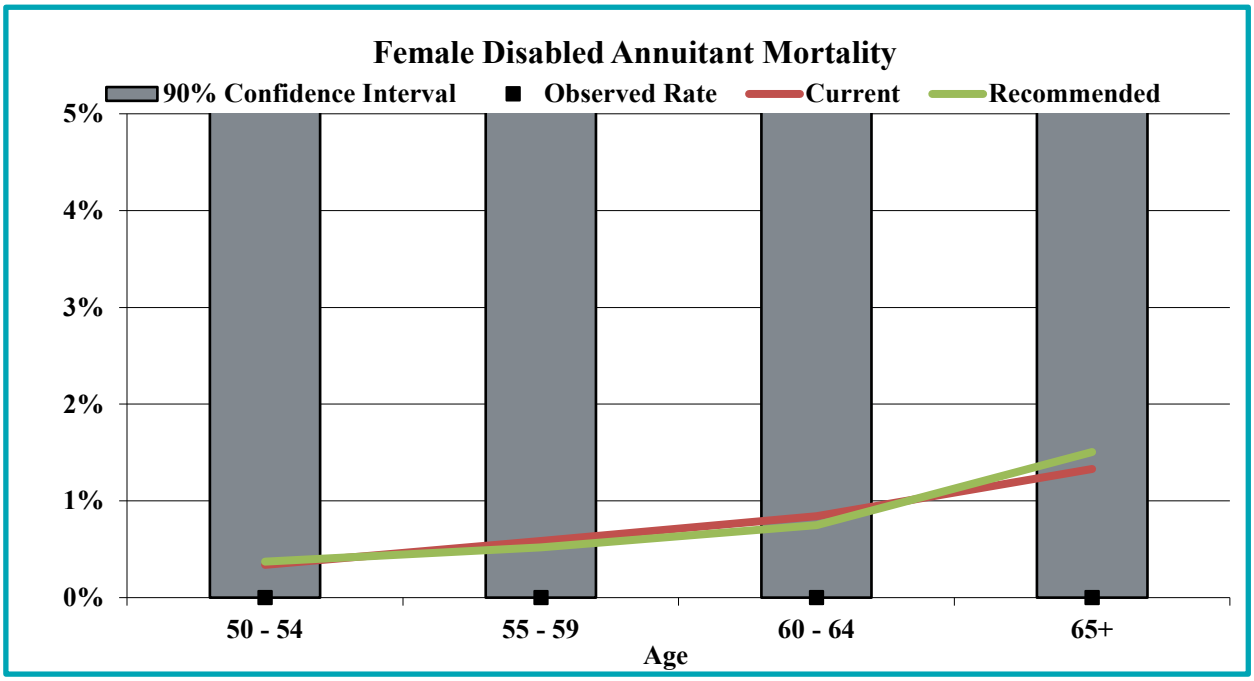
With limited experience at younger ages, we focused our analysis on ages 50 and above, the age range encompassing most of the expected deaths and all of the actual deaths.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Table III-M8 – Disabled Retiree Females

Disabled Annuitant Mortality - Base Table for Females								
Age Band	Exposures	Actual Deaths	Weighted Exposures	Weighted Deaths			A/E Ratios	
				Actual	Current	Recommended	Current	Recommended
50 - 54	11	0	474,308	0	1,617	1,760	0%	0%
55 - 59	22	0	1,203,985	0	7,067	6,246	0%	0%
60 - 64	29	0	1,198,999	0	10,103	9,005	0%	0%
65 +	17	0	797,528	0	10,604	11,986	0%	0%
Total	**79**	**0**	**3,674,820**	**0**	**29,392**	**28,997**	**0%**	**0%**
R-Squared					**0.000**	**0.000**		

Chart III-M8



With limited experience at younger ages, we focused our analysis on ages 50 and above, the age range encompassing most of the expected deaths.

SECTION III – DEMOGRAPHIC ASSUMPTIONS

FAMILY COMPOSITION

In the event of a member death, pension benefits may extend to a surviving spouse. Spousal demographic information is important in determining the value of their potential future benefit. However, marital information is not always readily available. In the case of an unmarried active member, they could marry before commencing benefits. Even married retirees are sometimes reported without a beneficiary date of birth. With this uncertainty, we make assumptions regarding the frequency with which participants are married at the time of benefit commencement as well as the age difference between the retirees and their spouses.

We currently assume the following:

- For members not currently receiving a benefit, 83.3% of members are assumed married to spouses of the opposite sex.
- Males are assumed to be two years older than females.

Based on healthy and disabled retirees that have commenced benefits between July 1, 2021 and June 30, 2024, approximately 80.6% are married with males being older than females by an average of 2.3 years.

As a result, we recommend continuing the current assumption.

SECTION IV – ECONOMIC ASSUMPTIONS

The economic assumptions used in actuarial valuations are intended to be long-term in nature and should be both individually reasonable and consistent with each other. The specific assumptions analyzed in this report are:

- **Price inflation** – used to project increases in the 401(a)(17) pay limit. This assumption is also used indirectly as an underlying component of other economic assumptions.
- **Wage inflation** – broad-based wage growth which is used to project the Social Security Wage Base.
- **Salary increase rate** – used to project increases in pay for active members in determining liabilities and costs of the System.

We have not studied the investment rate of return assumption since that assumption is set by the NJ State Treasurer.

In order to develop recommendations for each of these assumptions, we considered historical data, both nationally and for the System, expectations for the future and assumptions used by other public sector plans.

PRICE INFLATION

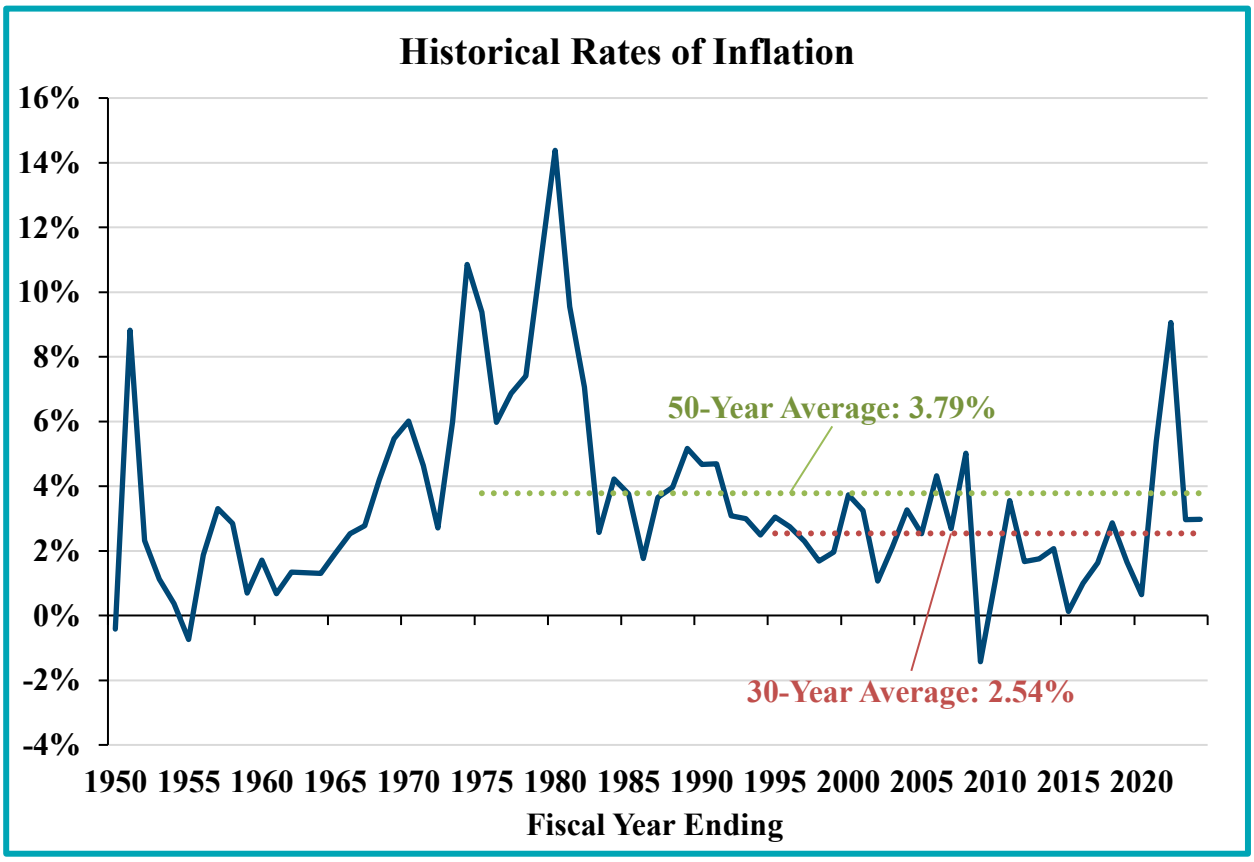
Long-term price inflation rates are the foundation of other economic assumptions. In a growing economy, wages and investments are expected to grow at the underlying inflation rate plus an additional real growth rate, whether it reflects productivity in terms of wages, or risk premiums in terms of investments.

SECTION IV – ECONOMIC ASSUMPTIONS

Historical Data

Chart IV-1 below shows inflation based on CPI-U for the U.S. by individual year from 1950 through 2024.

Chart IV-1



Data Source: US Bureau of Labor Statistics

Over the 50 years ending June 2024, the geometric average inflation rate for the U.S. has been about 3.8%, but this average is heavily influenced by the high inflation rates in the 1970s and early 1980s. Over the last 30 years, the geometric average inflation rate has been about 2.5%, and it has been 2.8% over the last ten years.

Recently, inflation broke from the long-term trend with annual rates of 5.4% and 9.1% for the years ending June 2021 and 2022, respectively. This spike was followed by annual rates of 3.0% in both June 2023 and 2024.

Short-term deviations bear monitoring but do not require an immediate revision to expectations. Economic assumptions frequently deviate significantly from expectations. Often those deviations are followed by offsetting deviations in the opposite direction. The assumptions used in actuarial valuations are long-term in nature and are not necessarily driven by the most recent events.

SECTION IV – ECONOMIC ASSUMPTIONS

Future Expectations

A measure of the market consensus of expected future inflation rates is the difference in yields between conventional Treasury securities and Treasury inflation-protected securities (TIPS) at the same maturity. Table IV-1 shows the yields on both types of securities and the break-even inflation rate as of May 2025. Break-even inflation is the level of inflation needed for an investment in TIPS to "break even" with an investment in conventional treasury securities of the same maturity.

Table IV-1

Break-Even Inflation Based on Treasury Yields

Time to Maturity	Conventional Yield	TIPS Yield	Break Even Inflation
5 Years	4.02%	1.64%	**2.38%**
10 Years	4.42%	2.11%	**2.31%**
20 Years	4.92%	2.46%	**2.46%**

Data Source: Federal Reserve, Constant Maturity Yields, Monthly Series

The Federal Reserve Bank of Philadelphia publishes a quarterly survey of professional economic forecasters that includes their forecasts of inflation over the next 10 years. The survey for the second quarter of 2025 shows a median inflation (CPI) forecast of 2.35%, a minimum forecast of about 2.20%, and a maximum forecast of 2.80%.

Additionally, we consider the Federal Reserve's statutory mandate of stable prices. Inflation does not occur in a vacuum. The Federal Reserve actively conducts monetary policy to bring inflation in line with a target. While the effectiveness of monetary policy may vary, the Fed's inflation target is an important reference point when setting an inflation assumption.

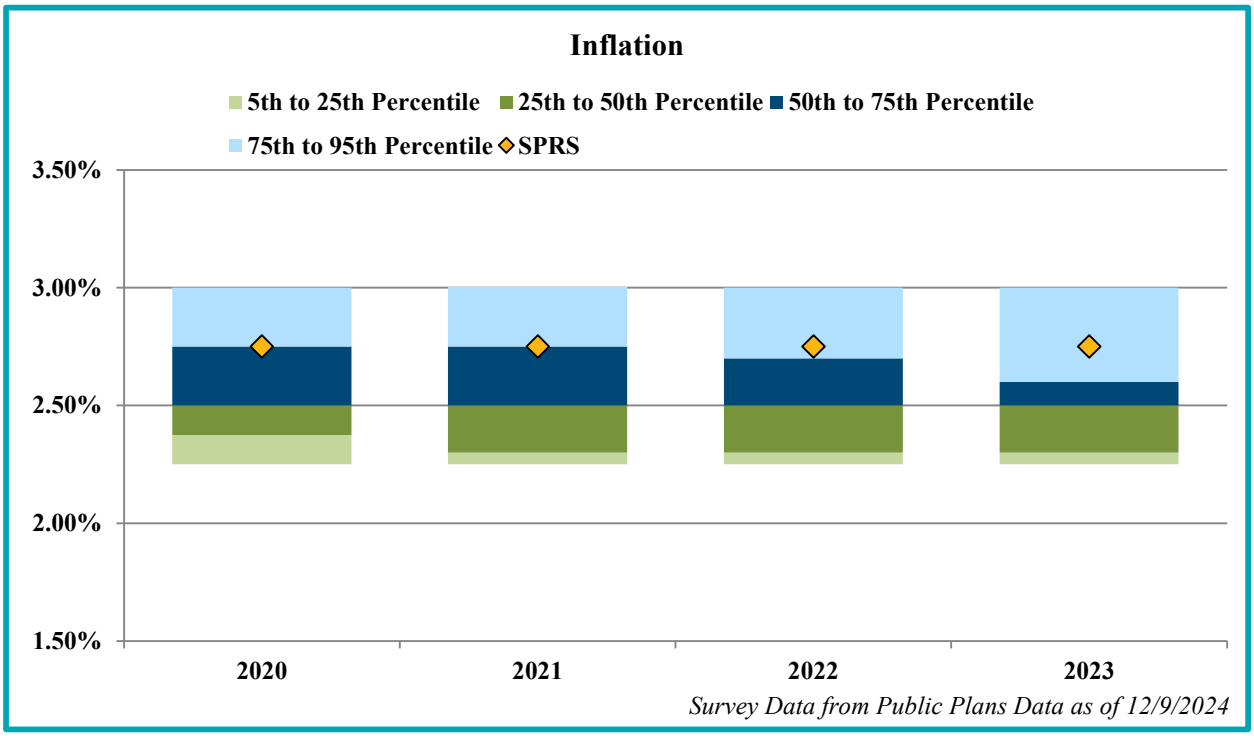
The Fed interprets stable prices as 2.0% annual inflation on a personal consumption expenditure (PCE) basis, which may differ from the CPI-based inflation used in setting the inflation assumption for SPRS. Since 2000, the annual change in CPI-U has been higher than the annual change in PCE by about 40 basis points, on average[1]. Therefore, an inflation assumption somewhat above 2.0% may be consistent with the Fed's inflation target.

[1] Based on PCE data from US Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis.

SECTION IV – ECONOMIC ASSUMPTIONS

Finally, Chart IV-2 below shows the distribution from the 5th to 95th percentile of inflation assumptions in the Public Plans Data[2], a database of information on large public sector retirement systems in the United States.

Chart IV-2



For 2020 through 2023, the median inflation assumption from this data was 2.50%. There has been a minor trend toward lowering the assumption, as evidenced by the decrease in the quartiles.

Recommendation

Based on these considerations, we believe a reasonable range for the long-term price inflation assumption is 2.00% to 3.00%. Recent inflation rates have been near the top end of this range while future expectations generally point toward the midpoint. We recommend maintaining the current assumption of 2.75% since it remains within the reasonable range.

WAGE INFLATION

Wage inflation can be thought of as the annual across-the-board increase in wages. Individuals often receive salary increases in excess of the wage inflation rate, and we study these increases as a part of the merit salary scale assumption. Wage inflation generally exceeds price inflation by some margin reflecting the history of increased purchasing power.

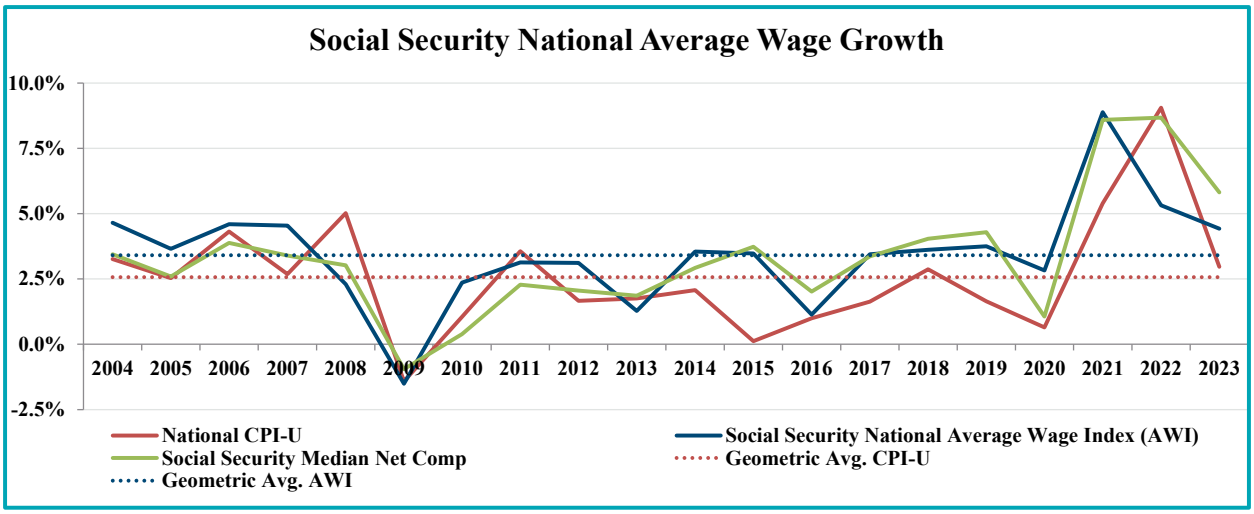
[2] www.publicplansdata.org. 2001-2023. Center for Retirement Research at Boston College, Mission Square Research Institute, National Association of State Retirement Administrators, and the Government Finance Officers Association.

SECTION IV – ECONOMIC ASSUMPTIONS

Wage inflation is used in the actuarial valuation to project the Social Security Wage Base in determining the actuarial liability.

Chart IV-3 shows the increase in national average wages (on a calendar year basis, as reported by the Social Security Administration) compared to inflation (on a June-to-June basis) from 2004 through 2023. National average wage data for 2024 is not yet available.

Chart IV-3



Over this period, national wage inflation averaged approximately 3.4% compared to annual price inflation of 2.6%, making real wage increases about 0.8%. Over the same time period, the increase in the median real wage was about 0.7% per year.

It is acceptable to assume some additional level of base payroll increase beyond general inflation. Potential reasons contributing to the increase may include productivity increases, the presence of strong union representation in the collective bargaining process, competition in hiring among other similar employers, and regional factors – such as the local inflation index exceeding the national average. Also, the Social Security Administration projects real wage growth of 0.5% to 1.7% going forward in their Social Security solvency projections included in the 2025 annual Trustees Report.

We recommend maintaining a small non-inflationary base payroll growth assumption of 0.5% annually. As a result, after factoring in inflation, the annual expected wage base increase assumption remains at 3.25%.

SALARY INCREASE RATE

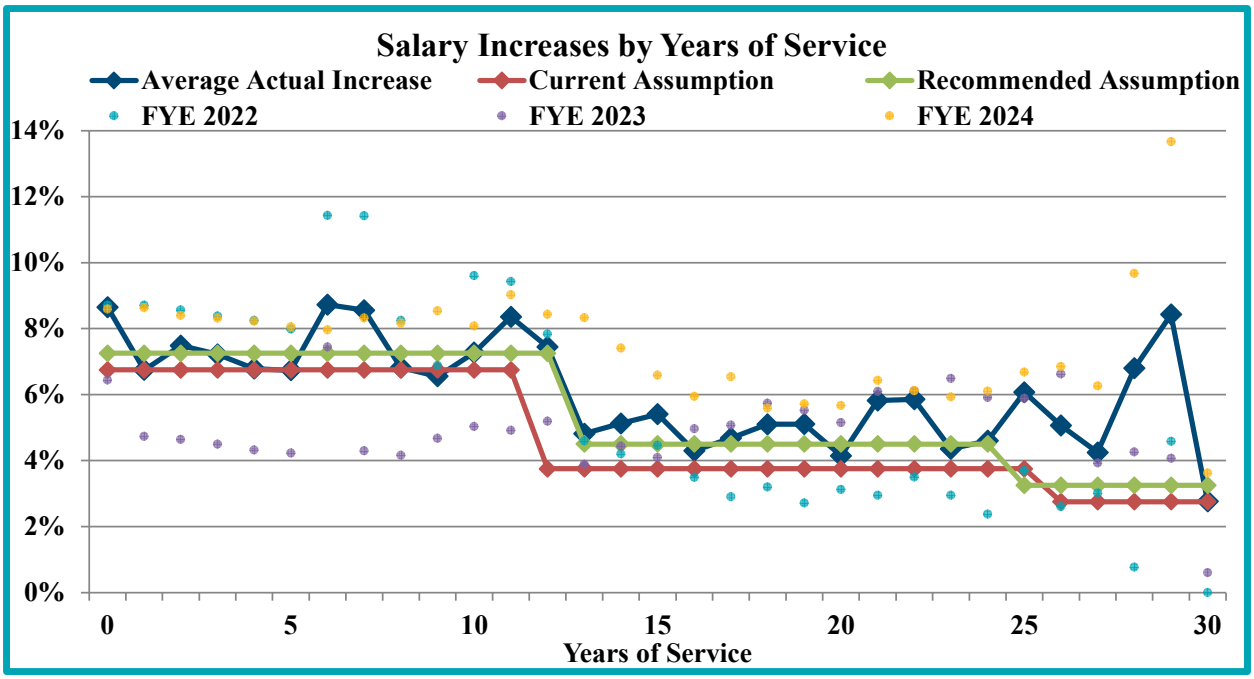
The salary increase rate represents the year over year increase in pay of continuing actives. Salary increases consist of three components: Increases due to cost-of-living maintenance (inflation), increases related to non-inflationary pressures on base pay (such as productivity increases), and increases in individual pay due to merit, promotion, and longevity.

The current assumption is 6.75% for 0 to 11 years of service, 3.75% for 12 to 25 years of service, and 2.75% for 26 or more years of service. Salary increases are assumed to occur on January 1.

SECTION IV – ECONOMIC ASSUMPTIONS

Generally, newer employees are more likely to earn a longevity increase or receive a promotion, so their salary increases tend to be greater than those for longer service employees. Chart IV-4 shows the salary increases based on years of service for continuing active members for FYE 2022 through FYE 2024 and the recommended assumption.

Chart IV-4



In general, salary increases have been higher than expected, with a consistent relationship between salary increases and years of service. Salaries for continuing actives, on average, increased 5.5%, 5.1%, and 7.2%, for FYE 2022, FYE 2023, and FYE 2024, respectively. Data for members with 25 or more years of service should be used cautiously. Many members retire at 25 years of service so, beyond 24 years, the experience is based on increasingly few individuals.

Experience continues to indicate a service-based assumption with higher salary increase rates for members with shorter service and lower salary increase rates for members with longer service. We recommend salary increase rates of 7.25% for members with less than 13 years of service, 4.50% for members with 13 to 24 years of service, and 3.25% for members with at least 25 years of service.

We have not fully adjusted the recommended assumption to the average because recent salary increases may be related to recent high inflation. The high level of salary increases may not continue if future inflation is consistent with the inflation assumption of 2.75%. The recommended assumption is consistent with the current union contract information for SPRS that has been provided to us.

APPENDIX A – SUMMARY OF RECOMMENDED ASSUMPTIONS

The demographic assumptions are based on an experience study covering the period July 1, 2021 through June 30, 2024.

1. Salary Increases

Salaries are assumed to increase annually as follows:

Service	Rates
0-12	7.25%
13-24	4.50
25+	3.25

Salaries increases are assumed to occur on January 1

2. 401(a)(17) Pay Limit

$345,000 in 2024 increasing 2.75% per annum, compounded annually.

3. Social Security Wage Base

$168,600 in 2024 increasing 3.25% per annum, compounded annually.

4. Termination

Termination rates are as follows:

Service	Rates
0 - 7	0.400%
8	0.335
9	0.270
10	0.205
11	0.140
12 - 19	0.075
20	0.000

No termination is assumed after attainment of retirement eligibility.

All members with ten or more years of service at termination are assumed to elect a deferred retirement benefit.

APPENDIX A – SUMMARY OF RECOMMENDED ASSUMPTIONS

5. Disability Disability rates are as follows:

Age	Ordinary Disability	Accidental Disability
20	0.009%	0.012%
21	0.009	0.012
22	0.012	0.016
23	0.012	0.016
24	0.012	0.016
25	0.015	0.020
26	0.015	0.020
27	0.015	0.020
28	0.027	0.036
29	0.027	0.036
30	0.032	0.042
31	0.032	0.042
32	0.036	0.048
33	0.113	0.150
34	0.115	0.153
35	0.116	0.155
36	0.118	0.157
37	0.119	0.159
38	0.121	0.162
39	0.123	0.164
40	0.125	0.166
41	0.125	0.167
42	0.126	0.168
43	0.127	0.169
44	0.127	0.170
45	0.128	0.171
46	0.129	0.172
47	0.130	0.173
48	0.130	0.174
49	0.131	0.174
50	0.132	0.176
51	0.144	0.192
52	0.156	0.208
53	0.165	0.220
54	0.177	0.236

No ordinary disability is assumed prior to attainment of ordinary disability retirement eligibility at four years of service or after attainment of special retirement eligibility at 25 years of service.

APPENDIX A – SUMMARY OF RECOMMENDED ASSUMPTIONS

Accidental disability rates apply at all ages until the mandatory retirement age of 55.

Members retiring under the ordinary disability decrement with 20 or more years of service are assumed to receive the involuntary disability retirement benefit.

Members are assumed to receive the greater of the applicable disability benefit or the service or special retirement benefit, depending on eligibility.

6. Mortality

Pre-Retirement (Non-Annuitant)**:** The Pub-2016 Public Safety Above-Median Income Employee mortality table *[PubS-2016(A) Employee]* as published by the Society of Actuaries (SOA), unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021.

35% of the deaths are assumed to be accidental.

For purposes of pre-retirement accidental death benefits based on Adjusted Final Compensation, the benefit is assumed to increase at 4.50% per year, consistent with the assumed salary increases for members with 13 to 24 years of service.

Healthy Retirees (Healthy Annuitants): The Pub-2016 Public Safety Above-Median Income Healthy Retiree mortality table *[PubS-2016(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021.

Beneficiaries (Contingent Annuitants): The Pub-2016 General Above-Median Income Healthy Retiree mortality table *[PubG-2016(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2016 on a generational basis using SOA's Scale MP-2021.

Disabled Retirees (Disabled Annuitants): The Pub-2016 Public Safety Disabled Retiree mortality table *[PubS-2016 Disabled Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from a base year of 2016 on a generational basis using SOA's Scale MP-2021.

APPENDIX A – SUMMARY OF RECOMMENDED ASSUMPTIONS

7. Retirement

For those with 24 years of service or less: 0.75%

For those with 25 years of service:

Age	Rates
50 or younger	35.00%
51-54	50.00

For those with 26 or more years of service: 35.00%

Mandatory retirement at age 55.

8. Family Composition Assumptions

For members not currently receiving benefits, 83.3% of members are assumed married to spouses of the opposite sex. Males are assumed to be two years older than females.

For purposes of the post-retirement death benefit for members currently in receipt, beneficiary status is based on the beneficiary allowance reported. If no beneficiary date of birth is provided, the beneficiary is assumed to be the member's spouse of the opposite sex with males assumed to be two years older than females.

No additional dependent children or parents are assumed.

For current dependents receiving a pre-retirement accidental death benefit, those under age 24 are assumed to receive a benefit until age 24 while those over age 24 are assumed to receive a benefit for the remainder of their lifetime.

For current dependents receiving a benefit other than a pre-retirement accidental death benefit, those under age 18 are assumed to receive a benefit until age 18 while those over age 18 are assumed to receive a benefit for the remainder of their lifetime.

APPENDIX B – SUMMARY OF CURRENT ASSUMPTIONS

The following are the assumptions used in the actuarial valuation as of July 1, 2024. The demographic and economic (other than the investment rate of return) actuarial assumptions for that valuation were based on the recommended assumptions from the July 1, 2018 – June 30, 2021 Experience Study, which was approved by the Board of Trustees on November 22, 2022.

1. Salary Increases

Salaries are assumed to increase annually as follows:

Service	Rates
0-11	6.75%
12-25	3.75
26+	2.75

Salaries increases are assumed to occur on January 1

2. 401(a)(17) Pay Limit

$345,000 in 2024 increasing 2.75% per annum, compounded annually.

3. Social Security Wage Base

$168,600 in 2024 increasing 3.25% per annum, compounded annually.

4. Termination

Termination rates are as follows:

Service	Rates
0 - 3	0.450%
4	0.300
5	0.225
6	0.200
7	0.175
8	0.150
9	0.125
10	0.100
11 - 19	0.075
20	0.000

No termination is assumed after attainment of retirement eligibility.

All members with ten or more years of service at termination are assumed to elect a deferred retirement benefit.

APPENDIX B – SUMMARY OF CURRENT ASSUMPTIONS

5. Disability Disability rates are as follows:

Age	Ordinary Disability	Accidental Disability
20	0.009%	0.015%
21	0.009	0.015
22	0.012	0.020
23	0.012	0.020
24	0.012	0.020
25	0.015	0.025
26	0.015	0.025
27	0.015	0.025
28	0.027	0.045
29	0.027	0.045
30	0.032	0.053
31	0.032	0.053
32	0.036	0.060
33	0.113	0.188
34	0.115	0.191
35	0.116	0.194
36	0.118	0.196
37	0.119	0.199
38	0.121	0.202
39	0.123	0.205
40	0.125	0.208
41	0.125	0.209
42	0.126	0.210
43	0.127	0.211
44	0.127	0.212
45	0.128	0.214
46	0.129	0.215
47	0.130	0.216
48	0.130	0.217
49	0.131	0.218
50	0.132	0.220
51	0.144	0.240
52	0.156	0.260
53	0.165	0.275
54	0.177	0.295

No ordinary disability is assumed prior to attainment of ordinary disability retirement eligibility at four years of service or after attainment of special retirement eligibility at 25 years of service.

APPENDIX B – SUMMARY OF CURRENT ASSUMPTIONS

Accidental disability rates apply at all ages until the mandatory retirement age of 55.

Members retiring under the ordinary disability decrement with 20 or more years of service are assumed to receive the involuntary disability retirement benefit.

Members are assumed to receive the greater of the applicable disability benefit or the service or special retirement benefit, depending on eligibility.

6. Mortality

Pre-Retirement (Non-Annuitant)**:** The Pub-2010 Public Safety Above-Median Income Employee mortality table *[PubS-2010(A) Employee]* as published by the Society of Actuaries (SOA), unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

35% of the deaths are assumed to be accidental.

For purposes of pre-retirement accidental death benefits based on Adjusted Final Compensation, the benefit is assumed to increase at 3.75% per year, consistent with the assumed salary increases for members with 12 to 25 years of service.

Healthy Retirees (Healthy Annuitants): The Pub-2010 Public Safety Above-Median Income Healthy Retiree mortality table *[PubS-2010(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Beneficiaries (Contingent Annuitants): The Pub-2010 General Above-Median Income Healthy Retiree mortality table *[PubG-2010(A) Healthy Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Disabled Retirees (Disabled Annuitants): The Pub-2010 Public Safety Disabled Retiree mortality table *[PubS-2010 Disabled Retiree]* as published by the Society of Actuaries, unadjusted, and with future improvement from a base year of 2010 on a generational basis using SOA's Scale MP-2021.

APPENDIX B – SUMMARY OF CURRENT ASSUMPTIONS

7. Retirement

For those with 24 years of service or less: 0.50%

For those with 25 years of service:

Age	Rates
48 or younger	25.00%
49-54	50.00

For those with 26 or more years of service: 35.00%

Mandatory retirement at age 55.

8. Family Composition Assumptions

For members not currently in receipt, 83.3% of members are assumed married to spouses of the opposite sex. Males are assumed to be two years older than females.

For purposes of the post-retirement death benefit for members currently in receipt, beneficiary status is based on the beneficiary allowance reported. If no beneficiary date of birth is provided, the beneficiary is assumed to be the member's spouse of the opposite sex with males assumed to be two years older than females.

No additional dependent children or parents are assumed.

For current dependents receiving a pre-retirement accidental death benefit, those under age 24 are assumed to receive a benefit until age 24 while those over age 24 are assumed to receive a benefit for the remainder of their lifetime.

For current dependents receiving a benefit other than a pre-retirement accidental death benefit, those under age 18 are assumed to receive a benefit until age 18 while those over age 18 are assumed to receive a benefit for the remainder of their lifetime.